09/636,104

(FILE 'HOME' ENTERED AT 12:43:14 ON 30 JUN 2003)

FILE 'CAPLUS' ENTERED AT 12:43:28 ON 30 JUN 2003

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L1          744 S DIELECTROPHOR?
L2       329083 S LIGAND#
L3           13 S L1 AND L2
L4       985587 S BIND?
L5           29 S L1 AND L4
L6           21 S L5 NOT L3
L7       607900 S IMMUNO?
L8           18 S L1 AND L7
L9            0 S L8 NOT (L3 OR L7)
L10          14 S L8 NOT (L3 OR L5)
L11          22 S ANTOBOD####
L12      377555 S ANTIBOD#####
L13          26 S L1 AND L12
L14           9 S L13 NOT (L3 OR L5 OR L8)
L15     1084596 S COMPLEX
L16          32 S L1 AND L15
L17          25 S L16 NOT (L5 OR L3 OR L8 OR L13)

=> d 13 2 4 7 11 bib ab

L3   ANSWER 2 OF 13  CAPLUS  COPYRIGHT 2003 ACS
AN   2002:849919  CAPLUS
DN   137:322260
TI   Method and apparatus for high-throughput biological-activity screening of
     cells and/or compounds
IN   Manaresi, Nicolo; Medoro, Gianni; Altomare, Luigi; Tartagni, Marco;
     Guerrieri, Roberto
PA   Silicon Biosystems S.r.l., Italy
SO   PCT Int. Appl., 49 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.        KIND  DATE           APPLICATION NO.  DATE
     ---------------   ----  --------       ---------------  --------
PI   WO 2002088702      A2   20021107       WO 2002-IT285    20020502
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
             PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,
             UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU,
             TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,
             CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,
             BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
PRAI IT 2001-TO411      A    20010502
AB   First entities consisting in cells or microorganisms (BIO) and second
     entities consisting in compds. or compd. units, carried typically by
     microbeads (BEAD), are trapped selectively within closed movable potential
     cages (S1) by means of dielectrophoretic force generated by
     mutually opposed electrodes (M1, M2). The cages are set in relative
     motion so as to bring about the interaction of selected first and second
     entities, causing the cages contg. them to fuse, whereupon results are
     obtained preferably by reinstating the original cages and/or observing
     previously empty adjacent cages. The procedure takes place in a device
     (DE) with two sep. chambers (F, FL) connected one to the other by way of a
     narrow passage (D) and finished with resp. selectively controllable inlets
     and outlets (I1, I2; O1, O2) through which a liq. or semi-liq. buffer (L)
     can be pumped in or out.

L3   ANSWER 4 OF 13  CAPLUS  COPYRIGHT 2003 ACS
AN   2001:104890  CAPLUS
DN   134:219317
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TI Combined laser tweezers a[redacted] dielectric field cage for the [redacted]alysis of receptor-**ligand** interactions on single cells
AU Reichle, Christoph; Sparbier, Katrin; Muller, Torsten; Schnelle, Thomas; Walden, Peter; Fuhr, Gunter
CS Department of Biology/Biophysics, Humboldt University, Berlin, 10115, Germany
SO Electrophoresis (2001), 22(2), 272-282
CODEN: ELCTDN; ISSN: 0173-0835
PB Wiley-VCH Verlag GmbH
DT Journal
LA English
AB A new technique based on the combination of optical and chip-based **dielectrophoretical** trapping was developed and employed to manipulate cells and beads with micrometer precision. The beads were trapped with optical tweezers (OT) and brought into contact for defined times with cells held in the **dielectrophoretic** field cage (DFC). The well-defined **ligand**-receptor system biotin-streptavidin was used to study the multiple interaction between biotinylated live cells and streptavidin-coated beads. The biotin d. on the cell surface was varied down to a few single bonds (3.+-.2 bonds/.mu.m2) to control the valency of the binding. The quant. relationship between the contact area, **ligand** d. and its diffusion rate in the outer membrane of the cell could be demonstrated. The increase of the strength of the cell-bead adhesion was strictly dependent on the increase of individual bond nos. in the contact area. This is in part due to accumulation of **ligands** (D - (0.5.+-.0.1) 10-8 cm2/s) in the contact area as seen by confocal laser scanning microscopy. Individual receptor-**ligand** rupture forces were evaluated and are compatible with values obtained by biomembrane force probe techniques. To summarize, the combination leads to a new powerful microsystem for cell handling and pN-force measurements on the single-cell level.
RE.CNT 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 7 OF 13 CAPLUS COPYRIGHT 2003 ACS
AN 2000:441672 CAPLUS
DN 133:55627
TI Integrated portable biological detection system
IN Cheng, Jing; Wu, Lei; Heller, Michael; Sheldon, Ed; Diver, Jonathan; O'Connell, James P.; Smolko, Dan; Jalali, Shila; Willoughby, David
PA Nanogen, Inc., USA
SO PCT Int. Appl., 67 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | WO 2000037163 | A1 | 20000629 | WO 1999-US31098 | 19991222 |
| | W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| | RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | | |
| | BR 9916840 | A | 20011009 | BR 1999-16840 | 19991222 |
| | EP 1144092 | A1 | 20011017 | EP 1999-968558 | 19991222 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI | | | | |
| | JP 2002536962 | T2 | 20021105 | JP 2000-589268 | 19991222 |
| PRAI | US 1998-113730P | P | 19981223 | | |
| | WO 1999-US31098 | W | 19991222 | | |

AB Provided is an integrated, portable system and device for performing active, integrated multi-step sample prepn. and mol. diagnostic anal. of biol. samples using a minimal no. of electronically addressable

microchips. Bacterial and cancer cells were sepd. from peripheral human blood in microfabricated electronic chips by **dielectrophoresis**. The isolated cells were examd. by staining the nuclei with fluorescent dye followed by laser induced fluorescence imaging. DNA and RNA were released from the isolated cells electronically and specific marker sequences were detected by DNA amplification followed by electronic hybridization to immobilized capture probes. Efforts towards the construction of a "lab.-on-a-chip" system are presented which involves the selection of DNA probes, dyes, reagents and prototyping of the fully integrated portable instrument.

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 11 OF 13 CAPLUS COPYRIGHT 2003 ACS
AN 1993:208993 CAPLUS
DN 118:208993
TI **Dielectrophoretic** methods for the selection, separation, and fusion of cells
IN Coster, Hans Gerard Leonard; Ashcroft, Robert Geoffrey; Mahaworasilpa, Tohsak
PA Facell Pty. Ltd., Australia
SO PCT Int. Appl., 82 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | WO 9305166 | A1 | 19930318 | WO 1992-AU473 | 19920904 |
| | W: AT, AU, BR, CA, CH, CS, DE, DK, ES, FI, GB, HU, JP, LU, NL, NO, PL, RO, RU, SE, US | | | | |
| | RW: AT, BE, CH, DE, DK, ES | | | | |
| | AU 9225620 | A1 | 19930405 | AU 1992-25620 | 19920904 |
| | AU 661037 | B2 | 19950713 | | |
| | EP 607178 | A1 | 19940727 | EP 1992-919530 | 19920904 |
| | EP 607178 | B1 | 20020417 | | |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, SE | | | | |
| | BR 9206463 | A | 19951212 | BR 1992-6463 | 19920904 |
| | AT 216426 | E | 20020515 | AT 1992-919530 | 19920904 |
| | US 5589047 | A | 19961231 | US 1994-204253 | 19940405 |
| PRAI | AU 1991-8213 | A | 19910905 | | |
| | AU 1991-82 | A | 19910905 | | |
| | WO 1992-AU473 | A | 19920904 | | |

AB Methods are described for the sepn. of cells of different types using **dielectrophoresis**. Also described are methods for the electrochem. selection of **ligand**-bearing cells (using an electrode bearing a complementary **ligand**) and for the fusion of an individually isolated cell with another cell or a vector, using **dielectrophoresis** to manipulate the cells (or the cell and the vector) into juxtaposition so that they may be fused. The fusion method is esp. applicable to prodn. of hybridomas. The methodol. of the invention was used, e.g., to produce a hybridoma making antibodies to keyhole limpet hemocyanin.

=> d l6 2 6 7 8 9 15 18 bib ab

L6 ANSWER 2 OF 21 CAPLUS COPYRIGHT 2003 ACS
AN 2003:133587 CAPLUS
DN 138:166190
TI Method and device for integrated biomolecular analyses
IN Manaresi, Nicolo; Medoro, Gianni; Altomare, Luigi; Tartagni, Marco; Guerrieri, Roberto
PA Silicon Biosystems S.R.L., Italy
SO PCT Int. Appl., 61 pp.
CODEN: PIXXD2
DT Patent
LA English

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | WO 2003014739 | A1 | 20030220 | WO 2002-IT524 | 20020807 |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI IT 2001-TO801 A 20010807

AB The invention concerns a method whereby first biol. entities are recognized by way of second biol. entities able to **bind** to the first (or the first to the second), including the steps of **binding** first biol. entities to a surface comprising an array of first electrodes selectively energizable and addressable at least in part, positioned facing at least one second electrode, bringing the second biol. entities into contact with the first, these second biol. entities and possibly the first being moved by means of **dielectrophoretic** cages generated between the electrodes, and sensing any **binding** activity between at least a portion of the first and of the second biol. entities, preferably utilizing radiation at a first frequency to excite fluorophore groups bound to the second biol. entities and detecting the emission of fluorescence at a second frequency by means of optical sensors integrated into the electrodes, the biol. entities preferably being concd. on the electrodes by the fusion of **dielectrophoretic** cages. Diagrams describing the app. assembly and operation are given.

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 6 OF 21 CAPLUS COPYRIGHT 2003 ACS
AN 2002:51655 CAPLUS
DN 136:98801
TI Bio-probes composed of puromycin-coupled protein-nucleic acid complexes for the separation of biological material by electrophoresis and **dielectrophoresis**
IN Wagner, Peter; Polakowski, Thomas
PA Xzillion GmbH & Co. K.-G., Germany
SO PCT Int. Appl., 20 pp.
CODEN: PIXXD2
DT Patent
LA German

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | WO 2002004656 | A2 | 20020117 | WO 2001-EP7259 | 20010626 |
| | WO 2002004656 | A3 | 20020919 | | |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

| | | | | | |
|---|---|---|---|---|---|
| | DE 10033194 | A1 | 20020124 | DE 2000-10033194 | 20000707 |
| | DE 10033194 | C2 | 20020718 | | |
| | EP 1305626 | A2 | 20030502 | EP 2001-955323 | 20010626 |

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

PRAI DE 2000-10033194 A 20000707
WO 2001-EP7259 W 20010626

AB The invention relates to [redacted] application of bio-probes whi[redacted] **bind** specifically to biol. material and thus permit the detection and/or sepn. of the material so marked from an environment of similar biol. material, by means of electrophoresis or **dielectrophoresis**. Th bio-probes are characterized in that they alter the elec. and/or dielec. properties of the biol. material. Targetted biol. materials are tissues, cells, organelles, virus, proteins, peptides, carbohydrates, nucleic acids, and lipids. Bio-probes are proteins, esp. antibodies that are bound to nucleic acids via puromycin.

L6 ANSWER 7 OF 21 CAPLUS COPYRIGHT 2003 ACS
AN 2002:18502 CAPLUS
DN 137:4655
TI **Dielectrophoretic** detection of molecular **bindings**
AU Kawabata, Tomohisa; Washizu, Masao
CS Wako Pure Chemical Industries, Ltd., Amagasaki, 661-0963, Japan
SO IEEE Transactions on Industry Applications (2001), 37(6), 1625-1633
CODEN: ITIACR; ISSN: 0093-9994
PB Institute of Electrical and Electronics Engineers
DT Journal
LA English
AB The specificity of mol. **binding** between the "target" and the "probe" mol., for example, between antigen and antibody or between two complementary DNA (DNA) sequences, is the principle of affinity assays. In the assay, the target is mixed with the fluorescence-labeled probe, so that the probe **binds** to the target to form a target-probe complex. Then, the bound complex is sepd. from the free (unbound) probe somehow (bound/free (BF) sepn.), and the fluorescence emission from the sepd. complex is measured to obtain the target concn. in the original sample. In this paper, we propose and exptl. demonstrate the use of **dielectrophoresis** (DEP) for such B/F sepns. Using DEP chromatog., DEP characteristics of various biomols. are measured, and: 1) sepn. of .lambda.-DNA (48.5 kbp) and oligonucleotide (22base) and 2) quant. detection of antigen-antibody **bindings**, are demonstrated. Using the triple complex formation to facilitate DEP sepn., a method is developed to detect B/F **binding** by a direct observation of the sepn. pattern on the microelectrode system. It is applied for: 1) quant. detection of alpha-fetoprotein, the diagnostic marker of liver cancer, through antigen-antibody reaction and 2) the detection of DNA sequence through hybridization. The methods developed here are compatible with micro fabrication, and suitable for affinity assays in micro-total anal. systems.
RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 8 OF 21 CAPLUS COPYRIGHT 2003 ACS
AN 2001:933091 CAPLUS
DN 136:34263
TI Miniaturized immunosensor assembled from colloidal particles between micropatterned electrodes
IN Kaler, Eric W.; Velev, Orlin D.
PA University of Delaware, USA
SO U.S., 11 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| US 6333200 | B1 | 20011225 | US 1999-358494 | 19990721 |
| PRAI US 1998-94173P | P | 19980727 | | |

AB The invention is a sensor for the presence of bio-specific (e.g., immunol.) mols. It is aimed to giving an alternative, highly advanced method for performing different tests for the presence of immuno-specific mols. in liq. environments such as body liqs., biol. cultures, environmental samples, etc. Gold patterns are photolithog. fabricated onto glass substrates to form addressable electrodes of micron size. The sensor is assembled when colloidal particles from suspension are deposited

**dielectrophoretically** in microscopic gaps between the electrodes. The surfaces of these particles carry immuno-active **binding** sites that collect the target mols. The sensor readout is accomplished by secondary tagging of the target mols. with colloidal gold and its enhancement by silver nucleation, which leads to short-circuiting of the electrodes. The device allows extreme miniaturization and direct elec. readout. We anticipate detection levels as low as 10-21 M, which is a 200 times gain in sensitivity over the conventional techniques.

RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 9 OF 21 CAPLUS COPYRIGHT 2003 ACS
AN 2001:246530 CAPLUS
DN 134:263159
TI Method for separating substances using **dielectrophoretic** forces
IN Washizu, Masao; Kawabata, Tomohisa
PA Wako Pure Chemical Industries, Ltd, Japan
SO Eur. Pat. Appl., 41 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | EP 1088592 | A2 | 20010404 | EP 2000-121135 | 20000928 |
| | EP 1088592 | A3 | 20011107 | | |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| | JP 2001165905 | A2 | 20010622 | JP 2000-297261 | 20000928 |
| | JP 2001165906 | A2 | 20010622 | JP 2000-300719 | 20000929 |
| PRAI | JP 1999-279912 | A | 19990930 | | |

AB The present invention has an object of providing a method by which two kinds or more of mols. can be sepd. each other by using **dielectrophoretic** forces. The present invention comprises two methods. The first method is a method comprising forming a complex substance of a "specific mol." contg. in a sample, and a "substance capable of changing **dielectrophoretic** properties of the specific mol.", which **binds** to the "specific mol." contained therein, and thereby sepg. the complex substance and the mols. other than the specific mol. in the sample from each other. The second method is a method comprising placing a soln. in which two kinds or more of mols. are dissolved under a strong elec. field strength, i.e., under a nonuniform elec. field having an elec. field strength of 500 KV/m or higher, by using **dielectrophoretic** forces.

L6 ANSWER 15 OF 21 CAPLUS COPYRIGHT 2003 ACS
AN 1999:268797 CAPLUS
DN 131:70544
TI In Situ Assembly of Colloidal Particles into Miniaturized Biosensors
AU Velev, O. D.; Kaler, E. W.
CS Center for Molecular and Engineering Thermodynamics Department of Chemical Engineering, University of Delaware, Newark, DE, 19716, USA
SO Langmuir (1999), 15(11), 3693-3698
CODEN: LANGD5; ISSN: 0743-7463
PB American Chemical Society
DT Journal
LA English
AB We show how to create arrays of biosensors by in situ assembly of colloidal particles onto micropatterned electrodes. Latex microspheres from suspension are collected via **dielectrophoresis** in the micrometer-sized gaps between planar electrodes. The assembled particulate patches are fixed by changing the colloidal interactions to induce coagulation. Immuno-active sites on the latex surfaces **bind** the target mols. A direct elec. cond. readout is accomplished after secondary tagging with colloidal gold and its enhancement by silver nucleation. The method holds promise for creating disposable on-chip arrays of highly sensitive miniature sensors for specific proteins, DNA fragments, or other biomols.

RE.CNT 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 18 OF 21 CAPLUS COPYRIGHT 2003 ACS
AN 1995:611525 CAPLUS
DN 123:134102
TI Applications of electrostatic stretch-and-positioning of DNA
AU Washizu, Masao; Kurosawa, Osamu; Suzuki, Seiichi; Shimamoto, Nobuo
CS Seikei University, Tokyo, 180, Japan
SO IEEE Transactions on Industry Applications (1995), 31(3), 447-56
CODEN: ITIACR; ISSN: 0093-9994
DT Journal
LA English
AB The authors have previously reported that the electrostatic orientation and the **dielectrophoresis** (DEP) of DNA occur under .apprxeq.1 MHz, > 1 .times. 106 V/m field, by which DNA strands are stretched straight along field lines and positioned onto electrode edges. This paper presents some application of this stretch-and-positioning method to genetic engineering. It is shown that the DNA size distribution, as well as the activities of nuclease, can be detd. by the measurement of the apparent length of stretched DNA. Several methods are developed to immobilize stretched DNA onto a substrate, including: 1) immobilization onto a conducting substrate for observations with the scanning tunneling microscopy, 2) anchoring onto a substrate only at the both ends of DNA using special electrode configuration, and/or mol. **binding** between avidin and biotin. The DNA can be held without contact to the substrate in the latter method, so that it does not cause steric hindrances to the DNA-**binding** enzymes. A novel Fluid Integrated Circuit (FIC) device is proposed in which stretched DNA is cut by laser beam for the successive sequencing. A method to obtain unidirectionally oriented DNA is developed. The spatial resoln., and the small no. of mols. required, are the advantages of the assays and measurements using electrostatic DNA manipulations over conventional biochem. methods. It is hoped that the methods may open a way to a novel category of "mol. biochem. with spatial resoln.".

=> d l10 1 2 4 6 7 8 10 11 12 13 14 bib ab

L10 ANSWER 1 OF 14 CAPLUS COPYRIGHT 2003 ACS
AN 2002:745155 CAPLUS
DN 137:244261
TI Biochemical analysis apparatus having probe-immobilized particles captured by impression
IN Takayama, Michio
PA Olympus Optical Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| JP 2002281967 | A2 | 20021002 | JP 2001-88381 | 20010326 |

PRAI JP 2001-88381 20010326

AB A method and app. for biochem. anal., where probe-immobilized particles are retained in the reaction chamber via capture and the capture function is regulated by impression, are disclosed. Electrodes are used for capture and dielec. substances are used for particles. **Dielectrophoretic** effect is used for capture. Magnetic particles, in particular, are used. Labeled substances, nucleic acids such as DNA or RNA, or **immuno**-substances, are analyzed.

L10 ANSWER 2 OF 14 CAPLUS COPYRIGHT 2003 ACS
AN 2002:633453 CAPLUS
DN 137:291162
TI Microchip technologies for the analysis of biological cells
AU Ichiki, Takanori; Shinbashi, Satomi; Ujiie, Takekazu; Horiike, Yasuhiro

CS Department of Electrical Electronics Engineering, Toyo[redacted]iversity, Kawagoe, 350-8585, Japan
SO Journal of Photopolymer Science and Technology (2002), 15(3), 487-492
CODEN: JSTEEW; ISSN: 0914-9244
PB Technical Association of Photopolymers, Japan
DT Journal
LA English
AB In the post-genome era, the importance of cell anal. is increasingly appreciated since the cell is the min. unit of the life phenomena. On-chip manipulation and measurement of biol. cells are recognized to be an important subject for the establishment of novel anal. tools and methodologies for the forthcoming new cell biol. In this paper on-chip manipulation of biol. cells and microparticles by means of **dielectrophoresis** and on-chip detection of single biol. cells by ac impedance spectrometry have been investigated using microfulidics devices with embedded microelectrodes which were fabricated by LSI compatible microfabrication technologies.
RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 4 OF 14 CAPLUS COPYRIGHT 2003 ACS
AN 2002:464461 CAPLUS
DN 137:30209
TI Apparatus and method for measuring microorganism number/microorganism concentration
IN Nakajima, Yuichi; Miyanishi, Tetsu; Yatsunami, Ryuichi; Suehiro, Junya
PA Matsushita Electric Industrial Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 16 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI JP 2002174636 | A2 | 20020621 | JP 2000-373884 | 20001208 |
| PRAI JP 2000-373884 | | 20001208 | | |

AB An app. with a simple structure for measuring the microorganism no./microorganism concn. is provided, which is capable of measuring the no. of specific microorganism in various kinds of samples with high sensitivity and automation. The app. comprises a reaction cell for introducing a sample liq. contg. the microorganism possessing a specific antigenic determinant, a detection liq. contg. a labeling substance-bound antibody capable of **immunol**. reacting with the antigenic determinant and a stabilization liq., and carrying out an antigen-antibody reaction in its inside, a measurement cell which is connected to the inside of the reaction cell through a connection path and equipped with a **dielectrophoresis** electrode for collecting the antibody-reacted microorganism at an elec. field-concd. part by **dielectrophoresis**, a **dielectrophoresis** power source part for applying an elec. current to the **dielectrophoresis** electrode, a measurement part for measuring the concn. of the labeling substance bound to the antibody-reacted microorganism collected at the elec. field-concd. part, a calcn. part for calcn. the microorganism no. and/or microorganism concn. from the concn. of the labeling substance, and a control part for controlling the **dielectrophoresis** power source part, the measuring part and the calcn. part. Diagrams describing the app. assembly and the operation flow are given.

L10 ANSWER 6 OF 14 CAPLUS COPYRIGHT 2003 ACS
AN 2002:293974 CAPLUS
DN 136:306389
TI Compositions and methods for separation of moieties on chips
IN Xu, Junquan; Wang, Xiaobo; Cheng, Jing; Yang, Weiping; Wu, Lei
PA Aviva Biosciences Corporation, USA
SO PCT Int. Appl., 85 pp.
CODEN: PIXXD2
DT Patent
LA English

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | WO 2002031506 | A1 | 20020418 | WO 2001-US30891 | 20011002 |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| | RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| | CN 1348100 | A | 20020508 | CN 2000-131649 | 20001009 |
| | AU 2001096516 | A5 | 20020422 | AU 2001-96516 | 20011002 |
| PRAI | CN 2000-131649 | A | 20001009 | | |
| | US 2000-686737 | A | 20001010 | | |
| | WO 2001-US30891 | W | 20011002 | | |

AB The invention concerns the sepn. of sample components and that they facilitate, and are often necessary for, sample anal. **Dielectrophoretic** sepn. provides an efficient, reliable, non-disruptive, and automatable method for the sepn. of moieties in a sample based on their dielec. properties. The present invention provides compns. and methods for enhancing the **dielectrophoretic** sepn. of one or more moieties in a sample. Diagrams describing the app. assembly and operation are given.

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 7 OF 14 CAPLUS COPYRIGHT 2003 ACS
AN 2002:282601 CAPLUS
DN 136:381510
TI An integrated, stacked microlaboratory for biological agent detection with DNA and **immunoassays**
AU Yang, Joon Mo; Bell, Janice; Huang, Ying; Tirado, Marcus; Thomas, Donald; Forster, Anita H.; Haigis, Robert W.; Swanson, Paul D.; Wallace, R. Bruce; Martinsons, Bob; Krihak, Michael
CS Nanogen, Inc., San Diego, CA, 92121, USA
SO Biosensors & Bioelectronics (2002), 17(6-7), 605-618
CODEN: BBIOE4; ISSN: 0956-5663
PB Elsevier Science Ltd.
DT Journal
LA English
AB An integrated, stacked microlab. for performing automated elec.-field-driven **immunoassays** and DNA hybridization assays was developed. The stacked microlab. was fabricated by orderly laminating several different functional layers (all 76.times.76 mm2) including a patterned polyimide layer with a flip-chip bonded CMOS chip, a pressure sensitive acrylic adhesive (PSA) layer with a fluidic cutout, an optically transparent polymethyl methacrylate (PMMA) film, a PSA layer with a via, a patterned polyimide layer with a flip-chip bonded silicon chip, a PSA layer with a fluidic cutout, and a glass cover plate layer. Versatility of the stacked microlab. was demonstrated by various automated assays. Escherichia coli bacteria and Alexa-labeled protein toxin staphylococcal enterotoxin B (SEB) were detected by elec.-field-driven **immunoassays** on a single chip with a specific-to-nonspecific signal ratios of 4.2:1 and 3.0:1, resp. Furthermore, by integrating the microlab. with a module for strand displacement amplification (SDA), the identification of the Shiga-like toxin gene (SLT1) from E. coli was accomplished within 2.5 h starting from a **dielectrophoretic** concn. of intact E. coli bacteria and finishing with an elec.-field-driven DNA hybridization assay, detected by fluorescently labeled DNA reporter probes. The integrated microlab. can be potentially used in a wide range of applications including detection of bacteria and biowarfare agents, and genetic identification.

RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 8 OF 14 CAPLUS COPYRIGHT 2003 ACS
AN 2002:207696 CAPLUS
DN 138:12422
TI Microfluidic sample preparation for **immunoassays**
AU Visuri, Steven R.; Benett, William J.; Bettencourt, Kerry; Chang, John; Fisher, Karl A.; Hamilton, Julie; Krulevitch, Peter A.; Park, Christina S.; Stockton, Cheryl A.; Tarte, Lisa; Wang, Amy; Wilson, Thomas
CS Lawrence Livermore National Laboratory, USA
SO Proceedings of SPIE-The International Society for Optical Engineering (2001), 4560(Microfluidics and BioMEMS), 83-89
CODEN: PSISDG; ISSN: 0277-786X
PB SPIE-The International Society for Optical Engineering
DT Journal
LA English
AB Researchers at Lawrence Livermore National Lab. are developing means to collect and identify fluid-based biol. pathogens in the forms of proteins, viruses, and bacteria. To support detection instruments, we are developing a flexible fluidic sample prepn. unit. The overall goal of this Microfluidic Module is to input a fluid sample, contg. background particulates and potentially target compds., and deliver a processed sample for detection. We are developing techniques for sample purifn., mixing, and filtration that would be useful to many applications including **immunol**. and nucleic acid assays. Many of these fluidic functions are accomplished with acoustic radiation pressure or **dielectrophoresis**. We are integrating these technologies into packaged systems with pumps and valves to control fluid flow through the fluidic circuit. Diagrams describing the app. assembly and operation are given.
RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 10 OF 14 CAPLUS COPYRIGHT 2003 ACS
AN 2001:835535 CAPLUS
DN 136:107052
TI A **dielectrophoresis** system for rapid analysis of Cryptosporidium parvum
AU Brown, A. P.; Betts, W. B.
CS Cell Analysis Ltd Institute For Applied Biology, University of York, York, YO10 5YW, UK
SO Special Publication - Royal Society of Chemistry (2001), 265(Cryptosporidium), 84-87
CODEN: SROCDO; ISSN: 0260-6291
PB Royal Society of Chemistry
DT Journal
LA English
AB The **dielectrophoretic** analyses of Cryptosporidium were conducted using model suspensions in deionized water media. The expts. showed the potential of **dielectrophoresis** (DEP) to collect Cryptoporidium oocysts from seeded tap water samples on microelectrodes, and to potentially discriminate between oocysts and the normal suspended solids present in real world water samples. The DEP system might be able to examine oocysts suspensions of much lower concn. but improvements in sensitivity to reach current regulatory requirements for Cryptosporidium anal. would undoubtedly be required. The non-Cryptosporidium debris filtered out from the water samples will also undergo **dielectrophoretic** collection, and due to their presence in greater nos. than normal Cryptosporidium levels, it is expected that their DEP collection might be greater than that found with Cryptosporidium. DEP is a rapid selective method which could improve time consuming techniques such as microscopy and viability detn., or offer an alternative sepn. procedure to **immunomagnetic** beads for sample clean up. It can discriminate the viable from non-viable oocysts on the basis of changes to frequency spectra, and might also be used as a system for confirmatory identification of oocysts on the basis of their frequency response without the need for fluorescent antibody labeling even with single oocysts.
RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 11 OF 14 CAPLUS COPYRIGHT 2003 ACS
AN 2001:636194 CAPLUS
DN 135:194468
TI Hybrid cell vaccines derived by fusion of an allogeneic dendritic cells and a non-dendritic cells and uses in tumor and infection therapy
IN Kanz, Lothar; Walden, Peter; Stuhler, Gernot
PA Eberhard-Karls-Universitaet Tuebingen Universitaetsklinikum, Germany
SO PCT Int. Appl., 42 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI WO 2001062902 | A1 | 20010830 | WO 2000-EP2433 | 20000320 |
| W: AE, AG, AM, AU, AZ, BA, BB, BG, BR, BY, CA, CN, CR, CU, CZ, DM, DZ, EE, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, MA, MD, MG, MN, MW, MX, NO, NZ, PL, RU, SD, SG, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | | |
| DE 10009030 | A1 | 20010920 | DE 2000-10009030 | 20000227 |
| EP 1130088 | A1 | 20010905 | EP 2000-105829 | 20000320 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| PRAI DE 2000-10009030 | A | 20000227 | | |
| US 2000-185334P | P | 20000228 | | |

AB The present invention relates to methods and compns. for treating and preventing cancer and infectious disease using hybrid cells formed by fusion of allogeneic dendritic cells and autologous non-dendritic cells which shares at least one class I MHC (major histocompatibility complex) allele. Such hybrid cells combine the vigorous alloreactivity of mature dendritic cells with the specific antigenicity of autologous tumor cells, thereby eliciting a highly specific and vigorous cytotoxic T lymphocytes (CTL) response. The invention also provides the methods for making hybrid cell vaccines and evaluating its cytotoxicity. For rapid and large-scale generation of hybrids, electrofusion is established as a two-step procedure: in the first step, tumor cells and dendritic cells (DCs) were **dielectrophoretically** aligned to from cell-cell conjugates; in the second step, a fusion pulse was applied, yielding 10-15% hybrid cell formation. The invention demonstrates that vaccine with tumor cell-dendritic cell hybrid results in regression of human metastatic renal cell carcinoma.
RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 12 OF 14 CAPLUS COPYRIGHT 2003 ACS
AN 2001:111976 CAPLUS
DN 134:233876
TI Electric manipulation of bioparticles and macromolecules on microfabricated electrodes
AU Huang, Ying; Ewalt, Karla L.; Tirado, Marcus; Haigis, Robert; Forster, Anita; Ackley, Donald; Heller, Michael J.; O'Connell, James P.; Krihak, Michael
CS Nanogen Inc., San Diego, CA, 92121, USA
SO Analytical Chemistry (2001), 73(7), 1549-1559
CODEN: ANCHAM; ISSN: 0003-2700
PB American Chemical Society
DT Journal
LA English
AB Bioparticle sepn., bioparticle enrichment, and elec. field-mediated immune detection were carried out on microfabricated semiconductor chips utilizing ac and dc elec. fields. Microscale sepn. on a chip surface having an active area of .apprx.16 mm2 was demonstrated for a mixt. of Bacillus globigii spores and Escherichia coli bacteria. **Dielectrophoretic** enrichment was performed by collecting target bioparticles from a flow stream in flow cells of .apprx.7.5 .mu.L,

achieving a 20-fold increase in the concn. of E. coli bacteria from a dild. sample, a 28-fold enrichment for peripheral blood mononuclear cells from red blood cells, and a 30-fold increase in white blood cells from dild. whole blood. The ability to manipulate and collect bioparticles and macromols. at microfabricated electrodes with ac and dc fields was further illustrated in elec. field-mediated **immunoassays** for analyzing the biol. identities of E. coli bacteria and B. globigii spores. According to these results, the elec. methods for manipulating bioparticles present themselves as viable techniques for novel biomedical applications in sample prepns. and biochem. assays on microelectrode arrays.

RE.CNT 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 13 OF 14 CAPLUS COPYRIGHT 2003 ACS
AN 1999:402298 CAPLUS
DN 131:198383
TI **Dielectrophoretic** Characterization and Separation of Antibody-Coated Submicrometer Latex Spheres
AU Hughes, Michael P.; Morgan, Hywel
CS Bioelectronics Research Centre Department of Electronic Engineering, University of Glasgow, Glasgow, G12 8QQ, UK
SO Analytical Chemistry (1999), 71(16), 3441-3445
CODEN: ANCHAM; ISSN: 0003-2700
PB American Chemical Society
DT Journal
LA English
AB The **dielectrophoretic** behavior of carboxylated 216-nm-diam. latex spheres has been characterized as a function of both medium cond. and applied field frequency. **Dielectrophoretic** crossover measurements and anal. were used to characterize the dielec. properties of the particles. The particles were functionalized with antibodies using 1-ethyl-3-(3-dimethylaminopropyl)carbodiimide (EDAC)-based coupling. Measurements indicated that the surface conductance of the native particles was 1.2 nS and that this reduced to a value of 0.7 nS after EDAC treatment and 0.25 nS after antibody coupling. Changes in the **dielectrophoretic** spectrum of the particles were exploited to demonstrate the principle of sepn. of unlabeled and protein-labeled particles. This demonstrates the potential for the development of new affinity sepn. systems based on ac electrokinetic methods.

RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 14 OF 14 CAPLUS COPYRIGHT 2003 ACS
AN 1997:807231 CAPLUS
DN 128:138147
TI Ultrasonic separations in analytical biotechnology
AU Coakley, W. Terence
CS School of Pure and Applied Biology, University of Wales Cardiff, Cardiff, CF1 ETL, UK
SO Trends in Biotechnology (1997), 15(12), 506-511
CODEN: TRBIDM; ISSN: 0167-7799
PB Elsevier Science Ltd.
DT Journal; General Review
LA English
AB A review, with 44 refs. Cells in megahertz-frequency noncavitating ultrasonic standing waves conc. at submillimeter distances and are, as large clumps, easily removed from suspension in flow or batch systems. An ultrasonic filter for perfusion hybridoma culture is now available. Results from small-vol. prototype anal.-scale systems can inform the design of effective filter or batch-clarification systems for a wide range of cell sizes, concns. and sample vols. Large increases in the rates of aq. biphasic sepns. and of the rates and sensitivities of anal. **immunocoated** particle-agglutination assays occur in standing waves. Ultrasonic manipulation is briefly compared with **immunomagnetic** and **dielectrophoretic** sepns.

RE.CNT 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d l14 1 4 6 bib ab

L14 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2003 ACS
AN 2003:9975 CAPLUS
DN 138:52313
TI Microorganism-measuring apparatus, microorganism-measuring electrode chip, and microorganism-measuring method
IN Suehiro, Junya
PA Japan Science and Technology Corporation, Japan
SO Jpn. Kokai Tokkyo Koho, 16 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI JP 2003000223 | A2 | 20030107 | JP 2001-192652 | 20010626 |
| PRAI JP 2001-192652 | | 20010626 | | |

AB A microorganism-measuring app. is provided, with which a specific microorganism is rapidly and conveniently quantitated in a mixed suspension liq. with high sensitivity without depending on an expert. The app. is equipped with two electrodes for concg. multiple kinds of microorganism by applying an a.c. voltage with a power source part for **dielectrophoresis** under the control with an operational control part, an **antibody** soln. tank for supplying an **antibody** soln. to a measurement chamber where an antigen-**antibody** reaction takes place specifically against the specific microorganism among multiple kinds of microorganism concd. between two electrodes, and the specific microorganism is sepd. from other microorganism by aggregation, and a measurement part for measuring the conductance change between two electrodes, calcg. the no. of the specific microorganism from the conductance change, and sending the result as an output. Diagrams describing the app. assembly and the operation principle are given.

L14 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2003 ACS
AN 2001:923671 CAPLUS
DN 136:62600
TI Dielectrically-engineered microparticles
IN Gascoyne, Peter R. C.; Becker, Frederick F.; Vykoukal, Jody; Wang, Xiao-bo
PA Board of Regents, the University of Texas System, USA
SO PCT Int. Appl., 93 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 7

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI WO 2001096023 | A2 | 20011220 | WO 2001-US19357 | 20010614 |
| WO 2001096023 | A3 | 20030213 | | |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | | |
| US 2003015428 | A1 | 20030123 | US 2001-883112 | 20010614 |
| EP 1305628 | A2 | 20030502 | EP 2001-946449 | 20010614 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR | | | | |
| PRAI US 2000-211515P | P | 20000614 | | |
| WO 2001-US19357 | W | 20010614 | | |

AB An engineered microparticle and methods and systems relating thereto. The microparticle includes a conductive core and an insulating layer

surrounding the conductiv ore and having a thickness suf ient to render the microparticle responsive to a **dielectrophoretic** force.

L14 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2003 ACS
AN 2001:46032 CAPLUS
DN 134:97488
TI Apparatus and method for measuring number of microorganism
IN Yatsunami, Ryuichi
PA Matsushita Electric Industrial Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | JP 2001013148 | A2 | 20010119 | JP 1999-188749 | 19990702 |
| PRAI | JP 1999-188749 | | 19990702 | | |

AB An automated measuring app. with simple structure is provided for measuring the no. of a particular microorganism in various kinds of samples with a high sensitivity. The app. comprises a reaction cell for generating an antigen-**antibody** reaction by mixing a sample liq. contg. the microorganism possessing a certain antigenic determinant with a test liq. contg. a labeling substance-bound **antibody** capable of reacting with the antigenic determinant, a sample liq.-introducing part for introducing the sample liq. into the reaction cell, a test liq.-introducing part for introducing the test liq. into the reaction cell, a measuring cell connected to the reaction cell via a connecting path and equipped with a migration electrode for moving the **antibody**-bound microorganism by **dielectrophoresis** and collecting them at an elec. field-concd. area, a migration power circuit for applying an AC voltage to the migration electrode, a measurement part for measuring the concn. of the labeling substance bound with **antibody**-bound microorganism collected at the elec. field-concd. area, and a calcn. part for calcg. the no. of microorganism or the concn. of microorganism from the concn. of the labeling substance. Diagrams describing the app. assembly and the operation flow are given.

=> d l7 9 17 bib ab

L7 ANSWER 9 OF 607900 CAPLUS COPYRIGHT 2003 ACS
AN 2003:492423 CAPLUS
TI Compositions and methods for the therapy and diagnosis of lung cancer
IN Algate, Paul A.; Lodes, Michael J.; Wang, Tongtong; Fan, Liqun; McNeill, Patricia D.
PA Corixa Corporation, USA
SO U.S. Pat. Appl. Publ., 63 pp., Cont.-in-part of U.S. Ser. No. 854,133.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 7

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | US 2003118599 | A1 | 20030626 | US 2002-144649 | 20020510 |
| | US 6444425 | B1 | 20020903 | US 1999-370838 | 19990809 |
| | US 2002110563 | A1 | 20020815 | US 2000-738973 | 20001214 |
| | US 2002183499 | A1 | 20021205 | US 2001-854133 | 20010511 |
| PRAI | US 1999-285323 | B2 | 19990402 | | |
| | US 1999-370838 | A2 | 19990809 | | |
| | US 1999-476235 | B2 | 19991230 | | |
| | US 2000-518809 | B2 | 20000303 | | |
| | US 2000-538037 | B2 | 20000329 | | |
| | US 2000-588937 | B2 | 20000605 | | |
| | US 2000-640878 | B2 | 20000818 | | |
| | US 2000-667170 | A2 | 20000920 | | |
| | US 2000-704512 | A2 | 20001101 | | |

US 2000-738973 A2 20[redacted]214
US 2001-854133 A2 20010511

AB Compns. and methods for the therapy and diagnosis of cancer, particularly lung cancer, are disclosed. Illustrative compns. comprise one or more lung tumor polypeptides, **immunog nic** portions thereof, polynucleotides that encode such polypeptides, antigen presenting cell that expresses such polypeptides, and T cells that are specific for cells expressing such polypeptides. The disclosed compns. are useful, for example, in the diagnosis, prevention and/or treatment of diseases, particularly lung cancer.

L7 ANSWER 17 OF 607900 CAPLUS COPYRIGHT 2003 ACS
AN 2003:491836 CAPLUS
TI Food allergens - structural and molecular basis of allergenicity
AU Wal, Jean-Michel
CS Laboratoire d'Immuno-Allergie Alimentaire, INRA, Service de Pharmacologie et d'Immunologie, CEA de Saclay, Gif sur Yvette, 91191, Fr.
SO Polish Journal of Food and Nutrition Sciences (2002), 11(SI 2), 149-155
CODEN: PJFSE7; ISSN: 1230-0322
PB Polish Academy of Sciences, Institute of Animal Reproduction and Food Research, Division of Food Science
DT Journal
LA English
AB The incidence of food allergy is increasing and the severity of the symptoms commonly obsd. is worsening. The no. of incriminated food allergens is also increasing. There is therefore a need to assess and identify the allergenicity of (new) foods and to consider ways of creating or, on the opposite, of suppressing **immunoreactive** structures through new technologies for the prodn. and the processing of foods. Allergenic foods are numerous and each food contains many allergens. They are generally glycoproteins and each of the protein constituents of a food may be allergenic. It has been obsd. that food allergens may share common structural features and similar physico-chem. characteristics. Many allergens have a compact 3 dimensional structure, stabilized by disulfide bonds. They are often stable mols., i.e. that are resistant to denaturation and proteolytic degrdn. by (gut) proteases. Each allergen generally comprises numerous **immunoreactive** mol. structures (epitopes) that appear to be widely spread all along the mol. Besides conformational epitopes, linear epitopes may account for a large part of the allergenicity of the whole protein and even be involved in specific clin. manifestations of food allergy. As far as food allergens are concerned those IgE binding epitopes may be located in hydrophobic regions of the protein where they are buried within its tertiary structure. They are then unmasked and become available for antibody recognition when the protein is degraded during digestion in the gut. Moreover **immunol** . cross-reactions between allergens from various origins also suggest that homologous amino acid sequences, i.e. similar linear epitopes, could be partly responsible for their allergenicity and could represent conserved structures where the frequence and intensity of IgE binding is the highest. A better understanding of the mol. mechanisms of allergen-IgE interactions would allow to predict the allergenicity of a (novel) foodstuff. Identification of allergenic constituents and characterization of major IgE binding epitopes would then make it possible to modify those structures in order to decrease the allergenic potential of this (novel) food.

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